

Amendments to the Drawings:

The attached sheets of drawings are replacement sheets for Figs. 6 and 11 and are being submitted as a separate file named "20080604_10-824724_Fig_6_and _11_replacemts" via EFS-Web. Minor errors were discovered in the formal drawing versions of Figs. 6 and 11 previously submitted on February 1, 2008, including some obstructed lead lines, arrows, and numerals. The replacement sheets contain no new matter.

The Applicant is also submitting a separate file via EFS-Web named "20080604_10-824724_marked_up_Fig_6_ and_11." This file has marked up copies of both of the respective corrected Figs. 6 and 11 labeled "ANNOTATED SHEET SHOWING CHANGES."

REMARKS/ARGUMENTS

Reconsideration of this application, as amended, is respectfully requested.

Regarding the Drawings

The Applicant is submitting corrected drawings for Figs. 6 and 11 as described on p. 11 of this paper.

Regarding the Claims

The Office has rejected Claims 1, 29, 39, and 45 under 35 USC 102(b), as being anticipated by United States patent 2,312,525 of Curtis. The Office has alleged that with regard to Claim 1, Curtis discloses an electric motor driven pump having a cover 16 forming a volute chamber 21; and with regard to Claims 29, 39, and 45, the end cover 40 has an inlet opening 82, a shaft opening, and a bearing race, respectively.

The Applicant has amended paragraph a. of Claim 1 to read, “a unitary housing formed of a single unitary part.” Bases for the proposed amendment of paragraph a. of Claim 1 are at page 9, lines 9 – 10, and in Figs. 1 – 4, housing 110. Paragraph a. of Claim 29 has been amended in the same manner.

The Applicant cites the relevant case, *Sentry Protection Products, Inc. v. Eagle Manufacturing Company*, 400 F.3d 910, 73 U.S.P.Q.2d 1929 (Fed. Cir. 03/11/2005), pertaining to the use of the term “single unitary part.” In *Sentry*, the term “single unitary part” referred to an impact protection component. The CAFC affirmed a federal District Court ruling that term was construed to mean “that the

impact protection component is a single part, which is complete by itself without additional pieces.”

With the amendment of Claim 1 and Claim 29 to recite the feature of the housing being formed of a single unitary part, it is respectfully submitted that the Office’s rejections of Claim 1 and Claim 29 as being anticipated by Curtis have been obviated. The Curtis patent does not teach a pump having a housing formed of a single unitary part. With reference to Figure 2, at page 2, column 1, lines 62 – 66 a pump casing 17; and at page 2, column 2, lines 43 – 46 a pump housing 17 “terminating in a flared portion 37 forming the head of a prime mover housing 38.” Then at the following lines 44 – 56, Curtis discloses that the motor housing 38 is secured to the pump housing 17 with draw bolt and nut assemblies 38a and 38b, and that the prime mover is preferably an electric motor. Clearly, the pump of Curtis is not comprised of a housing formed of a single unitary part containing both the electric motor and the pump cavity as recited in the Applicant’s Claims 1 and 29, but rather two separate housings for these purposes, which are fastened together.

It is respectfully submitted that with the amendment to Claims 1 and 29, these Claims are not anticipated by United States patent 2,312,525 of Curtis and are therefore allowable. It is further respectfully submitted that Claims 39 and 45, being dependent upon Claim 29 which is allowable, are also now allowable.

The Office has rejected Claims 16, 23, 24, 29 and 38 under 35 USC 102(b), as being anticipated by United States patent 6,464,471 of Mathis et

al. or United States patent 5,375,651 of Colwell. The Office has alleged that Mathis et al. disclose “a pump having a motor disposed in a cylindrical housing 68. The housing has an open end with a cover 36 attached thereto. The housing has a first air inlet opening 56 and a first air outlet opening 80.” The Office has alleged that Colwell discloses a pump having a motor disposed in a cylindrical housing 11, and that the housing has end covers 12 with air openings 14.

Paragraph a. of Claim 16 has been amended in the same manner as in Claim 1 previously described, and reads, “a ~~unitary~~ housing formed of a single unitary part.” With the amendment of Claim 16 and Claim 29 (as described previously) to recite the feature of the housing being formed of a single unitary part, it is respectfully submitted that the Office's rejections of Claim 16 and Claim 29 as being anticipated by Mathis et al. and Colwell have been obviated.

The Mathis et al. patent does not teach a pump having a housing formed of a single unitary part. With reference to Figure 6, at column 3, lines 12 – 16 Mathis et al. disclose a motor 26 including a front housing 32 and a rear housing 34; and at column 3, line 66 – column 4 line 1 that the rear housing 34 includes a near cylindrical outer shell 68. Then at column 5, lines 3 – 5, Mathis et al. disclose a pump chamber 114 defined between the assembled front pump sub-housing 44 and the rear pump sub-housing 42. Clearly, the pump of Mathis et al. is not comprised of a housing formed of a single unitary part containing both the electric motor and the pump cavity as recited in the Applicant's Claims 16 and 29, but rather multiple housings for these purposes that are fastened together.

Additionally, if one were to construe that the housings 32 and 34 are part of the motor 26, then the motor itself is not contained within a housing.

The Colwell patent does not teach a pump having a housing formed of a single unitary part. With reference to Figure 1, at column 2, lines 44 – 46 Colwell discloses a draft inducer blower motor mounting and cooling construction comprising an electric motor 10 having a housing 11. Then at the following lines 52 – 54, Colwell discloses that the shaft 13 of the electric motor is connected to a blower wheel 15 mounted thereon within a housing 16 of a draft inducer. Then at column 3, lines 1 – 5 and lines 22 – 26, Colwell discloses a heat shield 20 that is fastened to housing 16 and partially encloses motor 10. Clearly, the draft inducer or pump of Colwell is not comprised of a housing formed of a single unitary part containing both the electric motor and the pump cavity as recited in the Applicant's Claims 16 and 29, but rather two separate housings that are fastened together.

It is respectfully submitted that with the amendments to Claims 16 and 29, these claims are not anticipated by United States patent 6,464,471 of Mathis et al., or United States patent 5,375,651 of Colwell, and are therefore allowable. It is further respectfully submitted that Claims 23 and 24, being dependent upon Claim 16 which is allowable, and Claim 38, being dependent upon Claim 29 which is allowable, are also now allowable.

The Office has rejected Claims 2 - 4 under 35 USC 103(a), as being unpatentable over United States patent 4,569,638 of Harker in view of

United States patent 2,312,525 of Curtis. The Office has alleged that, “Harker et al. disclose an electric motor driven pump having a cover 103. However, Harker et al do not disclose that the cover forms a volute chamber. Curtis discloses that it is known to form volute chambers for reducing the flow velocity of the pumped fluid. In view of this teaching, it would have been obvious to form the pump chamber of Harker et al in the form of a volute. Plate 101 of Harker et al is readable as an ‘exclusionary plate’.”

In the previously presented remarks on amended Claim 1, it has been established that the Office's rejections of Claim 1 have been obviated, and that Claim 1 is allowable. It is respectfully submitted that by virtue of their dependence upon Claim 1, Claims 2 – 4 are also allowable. Additionally, the Applicant further submits that Claims 3 – 4 are also allowable for the reasons previously argued on pp. 25 – 29 of his Amendment of February 1, 2008.

The Office has rejected claim 15 under 35 USC 103(a), as being unpatentable over United States patent 2,312,525 of Curtis in view of United States patent 5,248,238 of Ishida. In the previously presented remarks on the amendment of Claim 1, which obviates the Office's rejection of Claim 1 under 35 USC 102(b) as being anticipated by United States patent 2,312,525 of Curtis, it was established that the Curtis patent does not teach a pump comprised of a housing formed of a single unitary part. The patent of Ishida also does not teach a housing formed of a single unitary part, but rather a first housing 14 “formed integrally with motor 10” and a second housing shown in Figure 1 enclosing the

motor 10. The second housing is not numbered, but is cross-hatched differently than housing 14 and is clearly a separate part. Thus nowhere in either the Curtis or the Ishida patent is there shown or suggested a housing formed of a single unitary part as recited in claim 1, upon which claim 15 depends. The Applicant respectfully submits that Claim 15 is therefore allowable, by virtue of the foregoing argument and by its dependence upon Claim 1 which is allowable.

The Office has rejected Claim 28 under 35 USC 103(a), as being unpatentable over United States patent 6,464,471 of Mathis et al. or United States patent 5,375,651 of Colwell in view of United States patent 5,248,238 of Ishida. In the previously presented remarks on the amendment of Claim 16, which obviates the Office's rejection of Claim 16 under 35 USC 102(b) as being anticipated by United States patent 6,464,471 of Mathis et al. or United States patent 5,375,651 of Colwell, it was established that neither of these patents teach a pump comprised of a housing formed of a single unitary part. The patent of Ishida also does not teach a housing formed of a single unitary part, as established in the immediately preceding argument regarding Claim 16. Thus nowhere in either the Mathis patent, or the Colwell patent, or the Ishida patent is there shown or suggested a housing formed of a single unitary part as recited in Claim 16, upon which Claim 28 depends. The Applicant respectfully submits that Claim 28 is therefore allowable, by virtue of the foregoing argument and by its dependence upon Claim 16 which is allowable.

The Office has rejected Claims 44 and 46 under 35 USC 103(a), as being unpatentable over United States patent 6,464,471 of Mathis et al. or United States patent 5,375,651 of Colwell in view of United States patent 4,162,419 of DeAngelis. In the previously presented remarks on the amendment of Claim 29, which obviates the Office's rejection of Claim 29 under 35 USC 102(b) as being anticipated by United States patent 6,464,471 of Mathis et al. or United States patent 5,375,651 of Colwell, it was established that neither of these patents teach a pump comprised of a housing formed of a single unitary part. The patent of DeAngelis is for an alternator and not a pump, and hence also does not teach a housing formed of a single unitary part including a pump cavity. Thus nowhere in either the Mathis patent, or the Colwell patent, or the DeAngelis patent is there shown or suggested a housing formed of a single unitary part as recited in Claim 29, upon which Claims 44 and 46 depend. The Applicant respectfully submits that Claims 44 and 46 are allowable, by virtue of the foregoing argument and by their dependence upon Claim 29 which is allowable.

The Applicant submits new independent Claim 48 and new dependent claims 49 – 51 dependent upon new Claim 48.

To facilitate the examination of new independent Claim 48, the Applicant summarizes Claim 48 as follows. Claim 48 includes all of the features of Claim 1, *except* paragraph a. of Claim 48 simply recites "a housing" (i.e. NOT including being formed of a single unitary part). Claim 48 also includes in paragraph e. the

exclusionary plate as follows: “an exclusionary plate disposed within said volute chamber and separating said volute chamber from an inner region within said housing, said rotatable drive shaft of said motor extending through a hole formed in said exclusionary plate, thereby forming an annular gap between said shaft and said hole, said annular gap providing fluid communication between said volute chamber and said inner region within said housing.” Thus Claim 48 lacks the housing being of a single unitary part as in Claim 1, but includes the exclusionary plate more featured than Claim 1 as recited above.

Bases for Claim 48 may be found at p. 9 line 8 through p. 20 line 14 and in Figs. 4, 6, 8, and 9. In particular, bases for the language “volute chamber” may be found at p. 19 line 19 – 20, and in Figs. 5, 6, and 8, volute chamber 160. Bases for the language “exclusionary plate” may be found at p. 19 line 15 through p. 20 line 2, and in Figs. 8 and 9, exclusionary plate 170. Bases for the language of the exclusionary plate “disposed within said volute chamber and separating said volute chamber from an inner region within said housing” may be found at page 19 lines 19 – 20 and p. 20, lines 8 – 9, and in Fig. 9, seal flood region 175. Seal flood region 175 is clearly an “inner region,” i.e., further inward from the volute chamber 160 in the pump housing as shown in Fig. 9. Additionally, at page 19, line 20, an “inner wall of the volute chamber” is recited, supporting the conventional meaning of the word “inner” in reciting an “inner region.” Bases for the language “an annular gap between said shaft and said hole” and “said annular gap providing fluid communication between said volute

chamber and said inner region within said housing” may be found at p. 19 lines 15 – 21, and in Fig. 9, annular gap 291.

Arguments in support of the allowability of Claim 48 will now be presented. The Applicant respectfully submits that none of the references cited by the Office show or suggest an exclusionary plate disposed within a volute chamber as recited in paragraph e. of Claim 48. In particular, the Office alleges in its rejection of Claim 2 that, “Plate 101 of Harker et al is readable as an ‘exclusionary plate’.” The Applicant wishes to point out that even if the Office were to construe the plate 101 of Harker (column 2, line 55) as an exclusionary plate, paragraph e. of Claim 48 recites further features not taught or suggested by Harker. In particular, the exclusionary plate of paragraph e. separates the volute chamber from an inner region of the housing, and there is an annular gap between the exclusionary plate and the pump drive shaft, through which fluid communication between the volute chamber and the inner region is provided. The plate 101 of the pump of Harker does not have this structure and does not do this.

In the Harker patent at column 2, lines 55 - 56, and with reference to Figure 1, Harker teaches, “A cover plate 101 is interposed between the motor housing 1 and the pump housing 103.” Clearly, the cover plate 101 of Harker does not form an annular gap with the pump shaft that provides fluid communication from the pump housing 1 into the motor housing 1. Were such fluid communication to be permitted, the liquid being pumped would leak into the pump motor, which would clearly be undesirable. Indeed, at column 2 line 60 – column 3 line 8, Harker teaches a rubber cup 109, ceramic seat 110, an O-ring

seal 118, and a seal spring 118a for the purpose of preventing liquid flow past the cover plate 101 into the motor housing 1. Additionally, at column 3, lines 7 – 8, Harker discloses that copper shaft sleeve 111 is provided “to protect shaft 105 from corrosion”, i.e. corrosion that would be caused by the liquid being pumped. The copper shaft sleeve terminates adjacent to where the shaft 105 passes through the wick closure plate 21, and provides no protection to that portion of the shaft 105. It is therefore clear that portion of the shaft is never intended to be wetted by the liquid being pumped.

Thus it is respectfully submitted that nowhere in the cited art is there shown or suggested a pump including the features of Claim 48. It is respectfully submitted that Claim 48 is therefore allowable.

Claim 49 recites the features beyond Claim 48 that the transfer pump further comprises “an annular region formed in said housing within said pump cavity, said annular region comprising a counterbore within which is disposed a seal, and enclosing a seal flood region.” Bases for Claim 49 may be found at p. 18 lines 17 – 21, and p. 20 lines 8 – 9, and in Fig. 9, annular region 141, counterbore 143, and seal flood region 175.

Nowhere in the cited art is there shown or suggested a pump comprised of a housing including an annular region, i.e. an annularly shaped portion of the solid housing, which encloses an open space through which flows liquid to flood the seal, as recited in Claim 49. It is respectfully submitted that Claim 49 as is therefore allowable, by virtue of the foregoing argument, as well as simply by its dependence upon Claim 48 which is allowable.

Claim 50 recites the features beyond Claim 49, “wherein said annular region formed in said housing has an upper passageway between said pump cavity and said seal flood region and a lower passageway between said pump cavity and said seal flood region.” Bases for Claim 50 may be found at p. 20 lines 8 – 9, and in Fig. 9, upper passageway 174 and lower passageway 176.

Since nowhere in the cited art is there shown or suggested an annular region of the housing enclosing a seal flood region, there is also not shown or suggested upper and lower passageways between the pump cavity and the seal flood region. It is respectfully submitted that Claim 50 is therefore allowable, by virtue of the foregoing argument, as well as simply by its dependence upon Claim 49, which is allowable.

Claim 51 recites the features beyond Claim 50, “wherein said volute chamber comprises a wall, and wherein a port is formed through said wall of said volute chamber.” Bases for Claim 51 may be found at p. 16 lines 3 – 6 and in Fig. 9, port 161.

Nowhere in the cited art is there shown or suggested a volute chamber comprised of a wall with a port therethrough as recited in Claim 51. It is respectfully submitted that Claim 51 is therefore allowable, by virtue of the foregoing argument, as well as simply by its dependence upon Claim 50, which is allowable.

In view of the foregoing, the Applicant respectfully submits that the independent claims patentably define the present invention over the citations of record. Further, the dependent claims should also be allowable for the same

reasons as their respective base claims and further due to the additional features that they recite. Separate and individual consideration of the dependent claims is respectfully requested.

By the instant amendment, the Applicant has amended his case, thereby placing Claims 1 – 4, 15, 16, 23, 24, 28, 29, 38, 39, 44 – 46, and new claims 48 - 51 in allowable form. Claim 5 has already been allowed. It is respectfully submitted that with the instant amendment, the Applicant's case is now allowable, and allowance thereof is respectfully requested.

To obtain entry of this Amendment, the Applicant is submitting a Request for Continued Examination herewith. The Applicant's agent will submit the required fee, along with a fee for the one additional independent claim (new Claim 48) via EFS-Web at the time of filing this Amendment. If any problem is encountered in the electronic payment of these fees, the Applicant's agent will take action as required to provide prompt payment of the fees via other means, such as by filing a credit card payment form, or by mailing a check in the amount of the fees with a Certificate of Mailing on the same day as the filing of this Amendment.

If for any reason the Examiner believes that a telephone conference might facilitate the prosecution of this case, he is respectfully requested to call Applicant's agent, John M. Hammond.

Respectfully submitted,

/John M. Hammond/

John M. Hammond
Registration No. 52,986

Agent for Applicant(s)
Patent Innovations LLC
150 Lucius Gordon Drive, Suite 205
West Henrietta, New York 14586
(585) 346-3783
jmhammond@patent-innovations.com